

1886. Ck. List Hem. Het. N. A.

1904. Hem. Het. N. M., Schwarz & Barber, Proc. U. S. N. M., Vol. 27, p. 352.

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Three new West Indian Species of the Ichneumonid Genus *Eiphosoma* (Hym.).

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The peculiar genus *Eiphosoma* is widely distributed in the American tropics, whence twelve species have already been described¹. In addition to these I obtained two others in Jamaica some years ago, and Dr. W. M. Mann discovered one in the neighboring island of Hayti. These are described on the following pages. The types are in the author's collection.

Eiphosoma luteum sp. nov. (Fig. 1).

♂. Length 12 mm. Almost entirely luteous, paler on the head and lower portions of the thorax; antennæ black, the scape and pedicel light brown below, darker above; basal joints of flagellum faintly tipped with pale yellow; ocellar area, connected with a large transverse marking on the occiput, black; teeth of mandibles black; middle lobe of mesonotum with a black spot in front, shading into a brown stripe behind; lateral lobes each with a brownish stripe; second and third abdominal segments black on upper edge except at tip; following segments similarly marked with piceous; tip of abdomen fuscous, external genitalia black; hind trochanters and femora at base and tip marked with fuscous; hind tibiæ dark above and their tarsi entirely dark fuscous. Wings hyaline, with a weak, but distinct infuscated area at tip.

Head broad and thin; ocelli large, the lateral ones removed by less than their diameter from the eye, twice as far from one another as from the eye. Antennæ reaching to middle of the second abdominal segment, about 37-jointed. Face shining, sparsely punctate, almost smooth medially; clypeus strongly protuberant medially; malar space two-thirds as long as width of mandible at base.

Mesonotum sparsely punctate medially, shining, on the lateral lobes almost without punctures. Scutellum smooth and shining. Propodeum

¹ See Cockerell, Proc. U. S. Nat. Mus., Vol. 46, pp. 61-64 (1913).

subshining, microscopically rugose punctate, with a distinct but not very deep median longitudinal depression; with a complete lateral carina just below the spiracle and a transverse one before apex; basally with a less distinct carina on each side, enclosing a large area on each side of the median depression; spiracle elongate-oval; tip of propodeum extending to the basal fourth of the hind coxa. Pleuræ shining; mesopleura sparsely, coarsely, punctate anteriorly and below, its oblique impression transversely striated except below; metapleura impunctate.

Abdominal petiole very little enlarged at tip and without punctures; its spiracles at the posterior third very prominent: following segments clothed with stiff black hairs; claspers rounded at apex. Tooth on hind femur acute, but not long. Wings without areolet; median and submedian cells of nearly equal length.

Type collected by the writer near Kingston, Jamaica, British West Indies. It was obtained in sweepings from the vegetation near the sea-coast in an extremely arid area at the mouth of the Hope River.

This species is easily recognized by its very pale color, punctation of thorax, and prominent petiolar spiracles. It is quite similar to the following species:

***Eiphosoma jamaicense* sp. nov.** (Fig. 2).

♂. Length 17 mm. Head, thorax and four anterior legs light yellow; abdomen and hind legs mostly fulvous. Body marked with black as follows: teeth of mandibles, wide stripe on front above antennæ enlarging to include the ocelli and widening to include most of the upper half of the posterior surface of the head, antennæ except scape and pedicel below and faint ring at tip of first two or three flagellar joints, a broad stripe narrowed behind on each mesothoracic lobe, groove at base of scutellum, anterior margin of propodeum and a longitudinal band on its dorsal surface extending from near the base to well beyond the middle, spot on posterior coxa above, upper edge of posterior trochanter, their tibiæ except for their spurs and a broad band at the middle, and their tarsi, spot at apex of abdominal petiole above, line on upper edge of second segment except at apex and claspers. Posterior femora fulvous, with an incomplete dark band near base, a narrower one before apex and pale yellow tip. Wings hyaline, not distinctly infuscated at tip.

Ocelli in a low triangle, the posterior ones separated by about twice their own diameter, and removed by one and one-half times their diameter from the eye; face and sides of front coarsely punctate, the punctures more sparse near the middle of the face and on the

clypeus; antennæ 43-jointed; sides of face slightly convergent below; malar space slightly shorter than width of mandible at base.

Mesonotum coarsely and sparsely punctate, the punctures few and far apart on the lateral lobes; scutellum smooth. Propodeum coarsely, but indistinctly rugose-reticulate, with a transverse basal carina that touches the basal margin medially and curves backward just outside the spiracle to join a lateral carina that is continuous with a transverse subapical one; median depression well marked, almost entirely smooth; tip of propodeum extending to the basal fourth of the coxa. Pleuræ polished, mesopleura in front and below with irregular sparse punctures; oblique impression smooth.

Petiole of abdomen slightly and gradually enlarged at tip; its spiracles

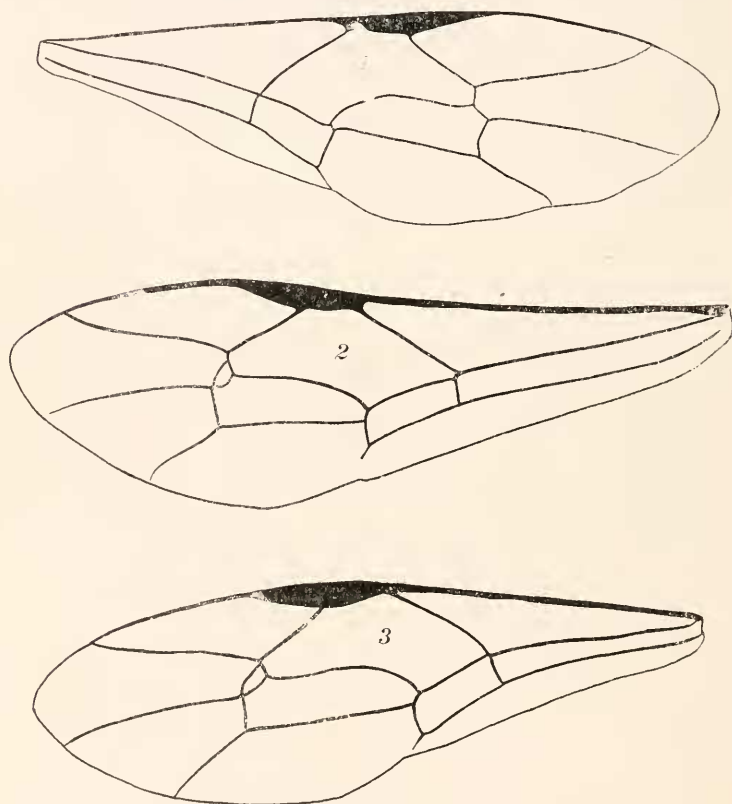


Fig. 1.—*Eiphosoma luteum* sp. nov. Fore wing of type.
Fig. 2.—*Eiphosoma jamaicense* sp. nov. Fore wing of type.
Fig. 3.—*Eiphosoma haitiense* sp. nov. Fore wing of type.

at the posterior third, not prominent; third and following segments with moderately prominent hairs; claspers with parallel sides, evenly rounded at tips. Tooth on hind coxæ small, but very acute. Wings with a large areolet; submedian cell slightly longer than the median.

Type from near Kingston, Jamaica, British West Indies.

This species resembles *E. montaguense* Ckll. from Guatemala, but differs in the form of the claspers. It agrees quite well in color with Cresson's description of *E. vitticolle* (Proc. Ent. Soc. Philadelphia, 1865, p. 53), but Cresson refers to the areolet as minute in *vitticolle*, while it is larger than usual in the present form.

***Eiphosoma haitiense* sp. nov.** (Fig. 3).

♀. Length (extended) 11 mm. Head, thorax and anterior legs lemon-yellow, marked with black; abdomen and hind legs fulvous, varied with black. Antennæ 42-jointed, black except underside of scape and pedicel. Black body markings as follows: stripe above antennæ, half as wide as the front, including anterior ocellus; transverse spot enclosing posterior ocelli, narrowly separated from the frontal stripe; two almost contiguous spots on vertex, well separated from the ocellar spot; three stripes on mesonotum, the lateral ones narrowed behind; anterior margin of propodeum, suddenly enlarged laterally and almost contiguous with a lateral stripe extending back from the spiracle; median depression of propodeum; swollen part of petiole, a long stripe on mesopleura enlarged above, upper margin of second segment except tip, upper margin of third on anterior half and sheaths of ovipositor. Base and apex of hind femora above and hind tibiæ except for lighter middle part, fuscous; hind tarsi piceous. Wings strongly infuscated at apex.

Eyes barely convergent below: sides of front rather closely punctate; face sparsely so, especially toward the middle; malar space slightly shorter than the width of mandibles at base. Ocelli in a low triangle, the lateral ones much closer to one another than to the eye-margin from which they are removed by a little less than their own diameter.

Median lobe of mesonotum closely punctate anteriorly, lateral lobes shining, impunctate except for a very few punctures near the middle. Propodeum highly polished, the median depression broad but only moderately deep; anterior transverse carina at the basal third, angularly bent forward near the middle and extending to the front margin to form the sides of a small area that is closed behind by a short transverse carina; posterior transverse carina complete, sinuous; lateral carina below the spiracle complete; pro- and mesopleuræ highly polished, the latter with a few widely scattered punctures below. Apex of propodeum extending to the basal fourth of the hind coxa.

Petiole of abdomen rather strongly, but very gradually widened at apex, its spiracles at the posterior third not at all prominent. Ovipositor as long as the three basal segments of the abdomen taken together. Hairs on abdominal segments sparse and weak. Tooth on hind femora well developed, acute; spurs of hind femora subequal, barely over one-third the length of the metatarsus. Wings with a rather large oblique areolet; median and submedian cells of equal length.

Type from Cape Haitien, Haiti; collected by Dr. W. M. Mann.

This is similar to *E. aztecum* to which it will run in Cockerell's table² and in my own³, but differs from the Mexican species by its much smaller size and in the color of the legs.

Dytiscus as a Destroyer of Mosquito Larvae (Col., Dipt.).

Larvae of dytiscids or diving beetles, the water tigers, have long been considered important enemies of the mosquito. Dr. J. B. Smith and others have performed laboratory experiments in which they showed that a single water tiger placed in a jar containing many mosquito larvae will kill or devour large numbers of them. Smith mentions (Report New Jersey State Agr. Exp. Station, 1904) a single experiment in which a water tiger killed or devoured 434 mosquito larvae in two days. He considers the water tigers as extremely important agents in the control of the salt marsh and fresh water mosquitoes.

The writer has observed in the field that many larvae are found in pools also occupied by the dytiscids. A few laboratory experiments showed that a single water tiger placed in a small jar containing many mosquito larvae did kill or devour tremendous numbers.

Three experiments were then performed in the laboratory using a few larvae only. Aquarium jars 11 inches in diameter and 7 inches in height were filled to about two-thirds their capacity with water. In each of them five water tigers were placed and were allowed to accustom themselves to their environment for a period of about an hour. Then to each of the jars were added 20 mosquito larvae of the second molt of the species *Culex pipiens*. At the end of 8 days jar No. 1 still contained 12 active mosquito larvae, jar No. 2 contained 9 living individuals and in jar No. 3 but 2 larvae remained. All the water tigers survived the experiment. Later experiments performed with single water tigers and the same number of mosquito larvae gave approximately the same results.

It would seem that the dytiscids may be of great importance in killing larvae when present in tremendous numbers, but that where the larvae are distributed pretty widely, there is little liability of their complete extermination by such an enemy.—F. E. CHIDESTER, Rutgers College, New Brunswick, New Jersey.

²Proc. U. S. Nat. Mus. vol. 46, p. 62. (1913).

³Psyche, vol. 18, p. 21 (1911).